

ABSTRACT OF THE DISCLOSURE

A method for forming doping superlattices in doped bulk semiconductors using one or more standing electromagnetic waves is disclosed. Using a standing optical beam comprising of optical beats (47) a uniformly doped bulk semiconductor (21) is converted into a doping superlattice comprising of planes (57). Using two and three standing optical beams comprising of optical beats, oriented perpendicular to one another, a doping superlattice comprising of a two dimensional array of wires (108), and a doping superlattice comprising of a three dimensional array of dots (112) can be formed, respectively.